

**ABSTRACT**

A full color fiber plasma display device includes two glass plates sandwiched around a top fiber array and a bottom fiber array. The top and bottom fiber arrays are substantially orthogonal and define a structure of the display, with the top fiber array disposed on a side facing towards a viewer. The top fiber array includes identical top fibers, each top fiber including two sustain electrodes located near a surface of the top fiber on a side facing away from the viewer. A thin dielectric layer separates the sustain electrodes from the plasma channel formed by a bottom fiber array. The bottom fiber array includes three alternating bottom fibers, each bottom fiber including a pair of barrier ribs that define the plasma channel, an address electrode located near a surface of the plasma channel, and a phosphor layer coating on the surface of the plasma channel, wherein a luminescent color of the phosphor coating in each of the three alternating bottom fibers represents a subpixel color of the plasma display. Each subpixel is formed by a crossing of one top fiber and one corresponding bottom fiber. The plasma display is hermetically sealed with a glass frit. The sustain and address electrodes are brought out through the glass frit for direct connection to a drive control system.